A.O.SMITH

CONSERVATIONIST®

COMMERCIAL GAS DIRECT VENT
TANK-TYPE WATER HEATERS
BTP-540A, BTPV-540A, BTP-650A,
BTPV-650A, BTP-740A, BTPV-740A

STANDARD FEATURES

Meets ASHRAE/IES 90.1-1999 thermal efficiency and standby loss requirements. Meets SCAQMD Low NOx requirements.

Professional Start-Up is provided.

BTP ATMOSPHERIC CONVENTIONAL (Vertical Venting) — A barometric draft regulating damper is provided.

BTPV HORIZONTAL AND DIRECT VENT — Optional vent kits allow for sidewall venting or direct venting.

GLASS-LINED TANK — Exclusive corrosion protection with glass-lining and nickelous oxide on all interior tank surfaces. Multiple anodes provide corrosion protection. Factory installed A.G.A./ASME rated Temperature and Pressure relief valve.

POWERED GAS BURNER — Premix Low NOx burner design with internal FGR. Features an internal blocked flue sensor, separate pilot system, internal thermal cutoff & anti-flashback barrier. Inlet gas pressures: 14" W.C. max., 8" W.C. min. natural gas only.

FULLY AUTOMATIC CONTROLS — Safety shut off, high temperature limit control, dual thermostat (adjustable 120°F thru 180°F) for accurate temperature control.

HIGH ALTITUDE INSTALLATION — Equipped with adjustable air intake damper, easy to reset for high altitude installation by Authorized BTP Start-Up agent.

DRAFT EQUALIZING COMBUSTION CHAMBER — Patented dome system balances pressures inside the combustion chamber to ensure even heat distribution, optimum flue loading and maximum heat transfer.

THICK PERMAFOAM INSULATION — Saves fuel, reduces standby heat loss.

JACKET — Is of heavy gauge steel with baked enamel finish over bonderized undercoat.

U.L. CERTIFIED.

ASME CONSTRUCTION — Rated working pressure 160 PSI.

A.G.A./ASME TEMPERATURE & PRESSURE RELIEF VALVE — Factory installed.

OTHER FEATURES

• Two layers of high temperature ceramic fiber insulation surrounding combustion chamber • Flame inspection port opening • Mounted on rugged channel iron skids • Multiple anodes for protection.

EASY CLEANING — One handhole clean out provided.

CAUTION: Must be installed on noncombustible surface.

Models	Storage Capacity U.S. Gals. (Litres)	Input Rating BTU/HR. Nat.	Recovery Rating GPH 100°F Rise	Recovery Rating Rating GPH 140°F Rise	Current Draw 120V 60Hz 1 Phase
BTP(V)-540A	85 (261)	540,000	523	374	6.0 Amps
BTP(V)-650A	85 (261)	650,000	630	450	
BTP(V)-740A	85 (261)	740,000	718	512	

Based on 80% thermal efficiency obtained in A. O. Smith engineering laboratories.
NOTE: To compensate for the effects of high altitude areas above 2000 feet, recovery ratings should be reduced approximately 4% for every 1000 feet above sea level.

Low NOx Certified

LIMITED WARRANTY OUTLINE

If the tank should leak anytime during the first three years, under the terms of the warranty, A.O. Smith will furnish a replacement heater less burner and controls; installation, labor, handling and local delivery extra.

THIS OUTLINE IS NOT A WARRANTY.

For complete information, consult the written warranty or A.O. Smith Water Products Company.

Warranty does not apply to product installed outside of the United States of America or its territorial possessions and Canada.

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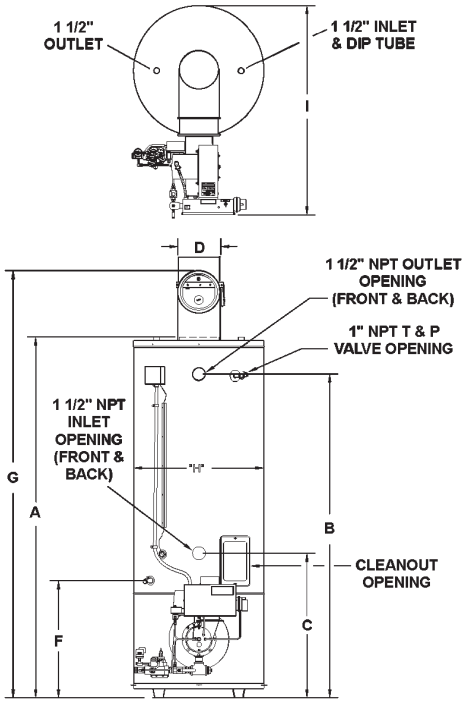
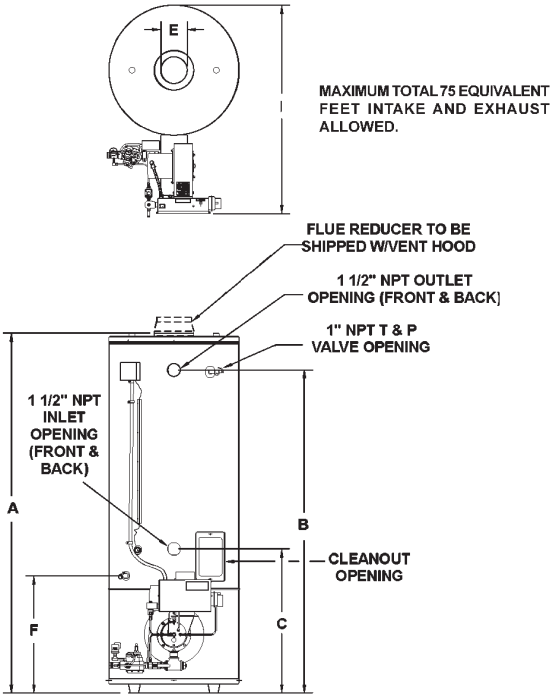
STANDARD BAROMETRIC DRAFT CONTROL
BTP MODELS



HORIZONTAL & DIRECT VENTING
BTPV MODELS


E
MAXIMUM TOTAL 75 EQUIVALENT FEET INTAKE AND EXHAUST ALLOWED.
FLUE REDUCER TO BE SHIPPED W/VENT HOOD
1 1/2" NPT OUTLET OPENING (FRONT & BACK)
1" NPT T & P VALVE OPENING
1 1/2" NPT INLET OPENING (FRONT & BACK)
A
B
CLEANOUT OPENING
F
C

ALL DIMENSIONS IN INCHES (MILLIMETERS)

Models	A	B	C	D**	E***	F	G	H	I	Gas Conn.	Approx. Ship. Wt.
BTP(V)-540A	80 3/4	73	32 1/4	9	6	26 1/2	93	29 1/2	48 1/2	1*	950
	2,051	1,854	819	229	152	673	2,362	749	1,232	25.4	431 kg
BTP(V)-650A	80 3/4	73	32 1/4	9	8	26 1/2	93	29 1/2	48 1/2	1*	950
	2,051	1,854	819	229	203	673	2,362	749	1,232	25.4	431 kg
BTP(V)-740A	80 3/4	73	32 1/4	9	8	26 1/2	93	29 1/2	48 1/2	1*	950
	2,051	1,854	819	229	203	673	2,362	749	1,232	25.4	431 kg

* Minimum gas supply pipe is 1 1/4", reference Manual, Table 7 for gas supply pipe size.
** D dimension is for atmospheric vent size.
*** E dimension is for direct and side-wall vent size.

BTP(V) SUGGESTED SPECIFICATION

GENERAL

Water heater(s) shall be Model_____as manufactured by A.O. Smith or equal. Water heater(s) shall be of glass-lined design and include a powered gas burner, redundant main gas valves, gas pressure regulator and flame inspection port. Heater(s) shall have an input rating of _____and a recovery rating of_____GPH at a temperature rise of 100°F with a maximum storage capacity of 85 gallons. Heater(s) shall be equipped with 1-1/2" NPT water inlet and outlet openings and a boiler-type handhole cleanout. Heater(s), for barometric venting and under UL795 for sidewall/direct venting, shall be constructed and stamped in accordance with ASME Boiler and Pressure Vessel Code and be so marked for a maximum working pressure of 160 psi. Heaters shall include a high temperature limit control, dual bulb thermostat for accurate temperature control and anti-stacking compensation and a factory installed A.G.A. rated temperature and pressure relief valve. Heater(s) shall be equipped with multiple anodes for corrosion protection, insulated with polyurethane foam, and meet ASHRAE/IES 90.1-1999 requirements for thermal efficiency and standby loss, and meet SCAQMD R1146.2 low NOx requirements. Heater(s) shall have a minimum thermal efficiency 80%. The outer jacket shall have a baked enamel finish over a bonderized undercoat. All internal surfaces of the heater(s) exposed to water shall be glass-lined with an alkaline borosilicate, nickelous oxide composition that has been fused to steel by firing at a temperature range of 1,400°F. Heater(s) tank shall have a 3 year limited warranty against corrosion as outlined in the written warranty.

METHOD OF VENTING

BTP heater(s) shall be factory supplied with a Barometric Draft Regulator for conventional atmospheric venting using conventional venting materials. BTPV heater(s) shall be supplied with an optional vent kit allowing for horizontal sidewall venting or direct venting.

BURNER AND CONTROLS

Burner(s) shall be of the premix with internal FGR & thermal cutoff design. Design shall include a separate spark pilot ignition system. In addition, burner(s) shall have an integral blocked flue sensor, glass view port, main gas regulator, automatic gas valve, manual test cock and manual gas shutoff valve. Burner(s) must be factory installed, tested and started by an A. O. Smith Authorized BTP start-up agent before placing the unit(s) into operation.

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